



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/334,137

Applicant: MURDIN, Andrew D. et al.

Filed: December 31, 2002

TC/A.U.: 1645

Examiner: Nita M. Minnifield

Docket No: 032931/0261

Commissioner for Patents
P.O. Box 1450
Washington, D.C. 20231

DECLARATION PURSUANT TO 37 CFR § 1.132

I, Andrew Murdin, Director, External R&D Canada, Aventis Pasteur, hereby declare that:

1. Details of my employment history are as follows:

Since 2002 Director, External R&D Canada, Aventis Pasteur.

1999 - 2002 Principal Research Scientist, Aventis Pasteur.

1997 - 2002 Section Head, Aventis Pasteur

1993 - 2003 Project Leader (Chlamydia), Aventis Pasteur

1990 – 1993 Research Scientist, Connaught Laboratories Ltd. (subsequently Pasteur Merieux Connaught, subsequently Aventis Pasteur), Toronto, Canada

1988 to 1990 - Post-Doctoral Research Associate, Dept. of Microbiology, State University of New York, Stony Brook, NY, USA.

1985 to 1987 - Post-Doctoral Research Fellow, Dept. of Microbiology, University of Surrey, Guildford, Surrey, England.

1981 to 1985 - Scientific Officer, Vaccine Research Dept., Animal Virus Research Institute, Pirbright, Surrey, England.

2. Details of my education are as follows:

B.Sc., University of Bath, England, 1980

Ph.D., University of Surrey, England, 1986

3. I have reviewed U.S. patent No. 6,559,294 to Griffais et al. ("Griffais"), which is cited in the Office Action mailed September 11, 2003.

4. Griffais sequenced the *C. pneumoniae* genome and identified 1296 putative open reading frames (see Table 1 of Griffais).

5. Griffais says any of the 1296 open reading frames can be used to make a vaccine. This is incorrect as discussed below.

6. Experiments conducted by the assignee Aventis Pasteur Limited demonstrate that only a few of the 1296 open reading frames can be used as vaccines.

7. Thirty six *C. pneumoniae* open reading frames coding for outer membrane proteins were tested for their ability to protect against *C. pneumoniae* infection in the *in vivo* mouse model. The attached Summary of Protective Results specifies:

- which construct was used for immunization. The constructs were made essentially as described in Examples 1 and 2 of the specification;
- which of Griffais' SEQ ID NOS correspond to the sequences in the construct, and
- whether these sequences confer protection. Testing of the constructs for immuno-protection was performed as described in Example 3 of the specification.

8. The attached Raw Biologic Data show the raw data (bacterial load per lung) in each experiment. The experiments were performed as described in Example 3 of the specification.

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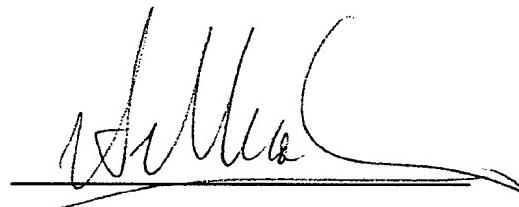
9. As is clear from the Summary of Protective Results and the Raw Biologic Data, of the 36 *C. pneumoniae* ORFs tested, only 8 (i.e. 22%) provided a protective effect.

10. These results confirm that Griffais is incorrect in stating that any of the 1296 open reading frames can be used in a vaccine.

11. I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

February 11th 2004

Date



Andrew Murdin,

Director, External R&D Canada

SUMMARY OF PROTECTIVE RESULTS

Plasmid-ID	Hit Description/Comment	corresponding SEQ ID No from WO99/27105	PROTECTIVE Yes/No	Tested in Screens/Group	WILCOXON "p" value (vs SALINE/PBS immunized-group B-on day 9, unless otherwise noted)
pcAI877	pmp1; putative 98 kDa outer membrane protein; CP 036	15	NO	S8 -group E	day 5-0.7302
					day 9-0.9048
pcAI397	pmp2; putative 98 kDa outer membrane protein; CP 017	25	NO	S3 -group E	day 5-0.5714
					day 9-0.3929
pcAI396	CP 014	28	YES	S4 -group F	S4-day 5-1.75
					S4-day 9-1.75
				S47 -group H	S47-0.007992
pcAI395	pmp4; putative 98 kDa outer membrane protein; CP 013	31/32	NO	S4 -group E	day 5-0.7857
					day 9-1.214
pcAI394	pmp5; putative 98 kDa outer membrane protein; CP 012	33/35	NO	S4 -group D	day 5-0.5714
					day 9-1.429
pcACPNM 200	IncA; inclusion membrane protein	201	NO	S34 -group D	0.2844



pcAI314	outer membrane protein; CP 008; Incyte 314	291	NO	S2 -group E	S2-day 5-0.7857
				S52 -group E	S2-day 9-0.7857
					S52-1.338
pcAI114	inclusion membrane protein B	304	NO	S17 -group D	0.7546
pcAI115	inclusion membrane protein C; CP 011	305	YES	S10 -group D	S10-day 5-0.03175
					S10-day 9-0.9048
				S56 -group K	S56-0.4136
pcAI111	outer membrane protein Omp85; CP 015	314	NO	S7 -group D	0.7302
pcABk319	OmpH-like outer membrane protein	315	NO	S32 -group H	S32-0.04262
				S47 -group I	S47-0.2284
pcAI368	pmp 6; putative 98 kDa outer membrane protein	466	NO	S17 -group I	1.655
pcAI640	pmp 7; putative 98 kDa outer membrane protein; CP 032	468	NO	S9 -group G	S9-day 5-0.03175
					S9-day 9-0.9048
				S56 -group F	S56-1.665

pCAI639	pmp 8; putative 98 kDa outer membrane protein; CP 031	470	NO	S7 -group F	day 9 only-0.9048
pCAI638	pmp 9; putative 98 kDa outer membrane protein; CP 030	472	NO	S41 -group D	S41-0.0293
				S56 -group G	S56-1.338
pCAI635	pmp 10; putative 98 kDa outer membrane protein; CP 029	477	NO	S38 -group I	S38-0.01998
				S57 -group H	S57-0.1812
pCAI634	pmp 11; putative 98 kDa outer membrane protein; CP 028	478	NO	S9 -group F	day 5-0.4127
					day 9-1.27
pCAI633	pmp 12; putative 98 kDa outer membrane protein	479	NO		
pCAI632	POMP91B precursor	480/482	NO	S10 -group G	S10-day 5-0.01587
					S10-day 9-0.5556
				S45 group H	S45-1.655
				S53 -group H	S53-0.1375
pCAI630	POMP91A	485	NO	S10 -group F	day 5-0.1111
					day 9-0.4127
pCAI628	putative 98 kDa outer membrane protein; CP 027	500	NO	S9 -group E	day 5-0.5556
					day 9-0.25

pCAI626	POMP90B precursor	500/501	NO

pCAI624	putative 98 kDa outer membrane protein	503	NO	S21 -group H	0.5728
pCAI622	POMP90B precursor	506	NO		
pCAI327	POMP91A	577	YES	S18 -group D S45 -group F S53 -group F	S18-0.01265 S45-0.4136 S53-0.004662
pCAI325	pmp 20; putative 98 kDa outer membrane protein	580	NO		
pCAI711	putative outer membrane protein	580	NO	S18 -group E	0.2824
pCA60kDa	60kDa CrP; outer membrane protein; CP 004	596	YES	S5 -group E	S5-day 5-0.03175
					S5-day 9-0.01587
				S27 -group H	S27-0.001335
				S43 -group J	S43-0.002664
				S44 -group J	S44-vs S43 grp B-0.007992
				S49 -groups J/K/L	S49-J-0.3095
					S49-K-0.9048
					S49-L-0.1508
				S50 -groups F/I	S50-F-0.345
					S50-I-0.000666
				S54 -group J	S54-0.7546

			YES	S1 -group D	S1-day 5-0.3929
pCAMOMP	major outer membrane protein; in S3-used recombinant CP MOMP; in S20-used CP MOMP ISCOMs	737			
				S1-day 9-1.75	
			S3 -group F	S3-day 5-0.25	
				S3-day 9-0.7857	
			S16 -groups D/G/H/F	S16-D-0.2468	
				S16-G-0.1775	
				S16-H-0.6991	
				S16-F-0.1255	
			S20 -group H	S20-0.05927	
			S27 -group I	S27-0.0293	
			S31 -groups D/E/F/G/H/I	S31-D-0.04262	
				S31-E-0.001332	
				S31-F-0.5728	
				S31-G-0.8518	
				S31-H-0.1812	
				S31-I-1.427	
			S50 -groups E/I	S50-E-0.002664	
				S50-I-0.000666	
			YES	S51 -group F	0.01399
pCAI555a	76 kDa protein-alternative reading frame	776/775			

pCAI419	PiIG	876	NO	S10 -group E	S10-day 5-0.01587
				S10-day 9-0.1111	
				S45 -group E	S45-1.509
				S53 -group E	S53-0.9452
pcACPNI	Predicted OMP	877	NO	S37 -group E	needed to be retested and never was
879					
pcACPNI	Hypothetical protein; sec. locus ORF	880	NO	S44 -group I	S44-vs S43 grp B-0.0293
882				S52 -group G	S52-0.7546
				S54 -group I	S54-0.662
pCAI473	Unannotated Orf	1035	YES	S23 -group I	0.08125
PCA9kDa	9kDa CrP; CP003	597	NO	S5 -group D	day 5-0.2857
					day 9-0.1905

RAW BIOLOGIC DATA

Note: sample dilution

S8-S57 - 1:50 and 1:100, UN DRAFTED

Screen #	S1
Date	

Genseq SEQ ID NO 737
pCAIMOMP

Screen #		S1	pCAIMOMP		Genset SEQ ID NO 737	
Notebook #	1537		Page #	1		
Plate A Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:100	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:50	Wilcoxon P values (vs group B, same day)
B1	5	5	20	5	15	
B2	5	0	0	2	0	
B3	5	0	1	1	0	
B4	9	14	61	19	32	
B5	9	2	11	2	11	
B6	9	2	6	0	4	
D1	5	6	49	5	4	
D2	5	1	6	4	2	
D3	5	0	10	4	13	
D4	5	4	2	7	6	
D5	5	0	4	0	0	
D6	9	3	2	0	1	
D7	9	6	5	0	0	
D8	9	10	2	6	0	
D9	9	0	0	0	0	
D10	9	21	0	1	0	

Genseq ID NO 737
PCAIMOMP

Screen #	S2	Notebook #	18
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Geneset SEQ ID NO 291
BCA1314

Genset SEQ ID NO 291
BCA1314

B6	9	65	64	31	20	25800	20400	23100					
E1	5	43	5	23	23	9600	18400	14000	8820	63063.7353	0.7857	DNA CF 008	
E2	5	24	43	6	2	13400	4000	8700				Incyte 314	
E3	5	34	15	24	27	9800	20400	15100					
E4	5	26	53	16	0	15800	6400	11100					
E5	5	1	1	0	0	400	0	200					
E6	9	11	6	5	4	36000	36000	37700	5640	3015.029802	0.7857	DNA CF 008	
E7	9	53	22	19	0	15000	7800	11300				Incyte 314	
E8	9	9	1	23	3	2000	10400	6200					
E9	9	16	6	6	2	4400	3200	3900					
E10	9	13	5	4	3	3600	2800	3220					

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GenSet SEQ ID NO 25

Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Group SD (EUflung)	'Wilcoxon P value vs grp B at same day)	Immunized with saline
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100					
B1	5	29	34	10	15	12900	10000	40300	33861.2857	na
B2	5	228	193	126	106	63900	82900	88300		
B3	5	61	46	36	26	21400	24800	23100		
B4	9	20	22	18	16	6600	7200	6400	93986.689517	3777.41828
B5	9	5	10	7	12	3000	7800	5300	na	saline
B6	9	39	39	17	16	15600	13200	14400		
E1	5	22	254	63	123	55200	62400	68300	44400	13801.9116
E2	5	12	153	46	99	33100	58000	45500		DNA CP 017 InCycle 397
E3	5	43	123	34	59	33200	37200	35200		
E4	5	116	69	64	47	43000	44450	43700		
E5	5	23	123	5	86	28200	28400	28900		
E6	9	56	208	55	95	52400	60000	56200	21980	18040.9091
E7	9	42	84	3	49	25200	28080	23000		DNA CP 017 InCycle 397
E8	9	8	33	12	14	7800	10400	8100		
E9	6	23	8	12	12	5800	8000	6900		
E10	9	9	60	12	20	15400	12800	14100		
F1	5	26	17	31	10	8600	16400	12500	10860	3161.3921
F2	5	32	27	7	11	11900	7200	9600		0.25 rec. CP MNMP
F3	5	9	18	5	7	5400	4800	5100		
F4	5	43	23	12	26	13200	15200	14200		
F5	5	22	30	20	14	10400	13800	12000		
F6	9	18	12	14	7	6000	8400	7200	11420	5298.58489
F7	9	9	11	6	6	4000	4800	4400		0.7457 rec. CP MNMP
F8	9	62	65	10	20	25400	12000	18700		
F9	9	46	27	11	6	15000	8800	16900		
F10	9	43	32	13	29	15000	16800	15900		

Screen #		S4	pCAJ394										GenSet SEQ ID NO 33/35										
Notebook #		1837	pCAI395										GenSet SEQ ID NO 31/32										
Page #		20	pCAI396										GenSet SEQ ID NO 28										
Mouse ID	Day post challenge	Plate A inclusions per well @ 1:50	Plate B inclusions per well @ 1:100	Plate A inclusions per well @ 1:100	Plate B inclusions per well @ 1:100	Plate A inclusions per well @ 1:100	Plate B inclusions per well @ 1:100	Plate A inclusions per well @ 1:100	Plate B inclusions per well @ 1:100	Average IFU per lung @ 1:100	Average IFU per lung @ 1:100	Average IFU per lung @ 1:100	IFU/lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon P value (vs grp B, same day)	Immunized with						
B1	5	52	39	15	12	18200	10800	14500	21800	175922331	na	na	na	na	na	na	na	saline					
B2	5	144	102	39	67	48200	42400	45800	52000	45200	na	na	na	na	na	na	na	saline					
B3	5	12	7	2	11	3800	5200	4500	na	na	na	na	na	na	na	na	na	saline					
B4	9	38	45	28	25	18200	18700	114868867	513441547	na	na	na	na	na	na	na	na	saline					
B5	9	20	19	8	9	7800	8600	7300	na	na	na	na	na	na	na	na	na	saline					
B6	9	12	28	9	13	8000	8800	8400	na	na	na	na	na	na	na	na	na	saline					
D1	5	102	85	52	43	37400	38900	37700	27060	1113455985	0.5714	DNA CP 012											
D2	5	65	51	28	26	23200	22100	22800	na	na	na	na	na	na	na	na	na	Incyte 394					
D3	5	52	45	7	17	19400	9800	14500	na	na	na	na	na	na	na	na	na	Incyte 394					
D4	5	26	52	29	18	15000	18900	17200	na	na	na	na	na	na	na	na	na	Incyte 394					
D5	5	98	100	75	43	39000	47200	43100	na	na	na	na	na	na	na	na	na	Incyte 394					
D6	9	58	26	34	12	16400	16400	17400	9040	525161673	1.4249	DNA CP 012						Incyte 394					
D7	9	44	32	13	9	15200	8800	12000	na	na	na	na	na	na	na	na	na	Incyte 394					
D8	9	13	6	4	4	3800	3200	3500	na	na	na	na	na	na	na	na	na	Incyte 394					
D9	9	17	14	2	1	6200	1200	3700	na	na	na	na	na	na	na	na	na	Incyte 394					
D10	9	23	29	11	7	10400	7200	8800	na	na	na	na	na	na	na	na	na	Incyte 394					
E1	5	44	42	22	26	17200	20400	18800	21940	152497344	0.7457	DNA CP 013						Incyte 395					
E2	5	45	43	7	13	17800	8000	12800	na	na	na	na	na	na	na	na	na	Incyte 395					
E3	5	14	11	8	8	5000	8400	57000	na	na	na	na	na	na	na	na	na	Incyte 395					
E4	5	47	55	26	26	20400	20800	20000	na	na	na	na	na	na	na	na	na	Incyte 395					
E5	5	122	121	60	70	48600	523000	503000	na	na	na	na	na	na	na	na	na	Incyte 395					
E6	9	41	72	44	56	22600	409000	31300	18220	171522388	.1214	DNA CP 013						Incyte 395					
E7	9	1	0	1	1	200	800	500	na	na	na	na	na	na	na	na	na	Incyte 395					
E8	9	15	116	58	53	48200	44400	45200	na	na	na	na	na	na	na	na	na	Incyte 395					
E9	9	12	13	10	9	5000	7600	63000	na	na	na	na	na	na	na	na	na	Incyte 395					
E10	9	16	17	13	9	68000	88000	77000	na	na	na	na	na	na	na	na	na	Incyte 395					
F1	5	12	1	5	10	2600	8000	4300	8540	392611788	1.75	DNA CP 014						Incyte 395					
F2	5	34	39	10	20	14800	12000	13300	na	na	na	na	na	na	na	na	na	Incyte 395					
F3	5	32	31	11	12	12800	9200	108000	na	na	na	na	na	na	na	na	na	Incyte 395					
F4	5	20	5	7	6	5000	6000	55000	na	na	na	na	na	na	na	na	na	Incyte 395					
F5	5	41	34	15	16	15000	12400	13100	na	na	na	na	na	na	na	na	na	Incyte 395					
F6	9	23	26	18	15	8800	13200	11500	4400	38588816	1.75	DNA CP 014						Incyte 395					
F7	9	8	5	1	6	2800	2800	2700	na	na	na	na	na	na	na	na	na	Incyte 395					
F8	9	12	10	3	4	4400	2800	36000	na	na	na	na	na	na	na	na	na	Incyte 395					
F9	9	5	0	0	0	2000	0	0	na	na	na	na	na	na	na	na	na	Incyte 395					

F10 9 3 11 4 5 2800 3800 3200

Screen #	55
Date	

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Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per long @ 1:50	Average IFU per long @ 1:50	Group SD (IFU/long)	Wilcoxon p value (vs grp B, same day)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:100	Inclusions per well @ 1:100					
B1	5	0	4	2	5	800	2800	1890	331.658907	na
B2	5	3	3	1	2	1200	1200	1200		saline
B3	5	5	2	4	3	1400	2800	2100		
B4	5	6	5	3	1	2200	1600	1900		
B5	5	7	3	2	0	2000	800	1400		
B6	9	3	0	1	3	600	1800	1100	4320	4139.75845
B7	9	10	1	5	0	2200	2000	2100		
B8	9	33	18	26	10	10400	14400	12400		
B9	9	7	8	6	4	3000	4800	3900		
B10	9	5	6	4	0	2600	1600	2100		
D1	5	10	6	7	4	3200	4400	3800	3739.65239	0.2457
D2	5	5	2	3	5	1400	3200	2300		CPCRMp 9 HD
D3	5	21	27	22	11	9800	13200	11400		
D4	5	6	5	2	5	2200	2800	2500		
D5	9	3	6	4	2	1800	2400	2100	1400	613.74324
D6	9	4	0	0	0	800	0	400		CPCRMp 9 HD
D7	9	3	1	1	0	800	400	600		
D8	9	6	3	3	4	2200	2800	2500		
E1	5	0	0	1	0	0	400	200	525	471.036082
E2	5	1	0	0	0	200	0	100		CPCRMp 60 HD
E3	5	1	4	0	0	1000	0	500		
E4	5	4	3	3	0	1400	1200	1300		
E5	9	1	0	0	1	200	400	300	125	129.903811
E6	9	0	0	0	0	0	0	0	0.01587	CPCRMp 60 HD
E7	9	0	0	0	1	0	400	200		
E8	9	0	0	0	0	0	0	0		

Screen #	S7
Date	

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pCAI111
pCAI569

Genset SEQ ID NO 314
Genset SEQ ID NO 470

(nc = not counted due to background)

There were problems with background. Therefore counting of inclusions was very difficult.

Only day 3 samples were counted at 1:100 dilution. Where count of 1:100 dilution was low, count of 1:50 dilution was made.

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon P value (vs grp B, same day)	Wilcoxon P value (vs grp B, same day) immunized with saline
B6	9	nc	nc	121	183			121600	57380	44196.036	na	
B7	9	nc	nc	93	112			82000				
B8	9	13	16	4	3	5800	2800	4300				
B9	9	30	36	9	15	12000	9500	11400				
B10	9	nc	nc	85	84			61600				
D5	9	nc	nc	118	185			125600	86700	18278.614	0.7302	DNA CP-015
D6	9	nc	nc	94	115			83600	63600			CPN100111
D7	9	nc	nc	121	122			101200	101200			
D8	9	nc	nc	98	122			88400	88400			
F5	9	18	41	4	/ 21	11800	10000	10900	61025	26555.6727	0.0048	DNA CP-031
F6	9	nc	nc	87	101			75200	75200			CPN100699
F7	9	nc	nc	86	91			70800	70800			
F8	9	nc	nc	105	113			67200	67200			

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pCA1877 Genset SEQ ID NO 15

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Group SD IFU/lung	Group mean IFU/lung	Wilcoxon P value (vs grp B, same day)	Immunized with saline
B1	5	229	135	143	71	91600	111200	115300	106900	196720	69320	1973
B2	5	385	190	170	88	146000	144000	140800	143700			
B3	5	510	353	378	160	204000	282800	256000	261400			
B4	5	719	436	358	148	287600	317600	236800	286900			
B5	5	479	261	262	98	191600	206200	156800	191700			
B6	9	132	69	75	20	52800	57600	32000	50000	137200	132556	228
B7	9	151	63	71	27	60400	53800	43200	52700			
B8	9	155	75	84	22	62000	63800	35200	66100			
B9	9	373	113	211	76	149200	126600	121600	132500			
B10	9	1089	425	580	213	435600	402000	349800	395100			
E1	5	483	242	240	132	185200	192800	211200	186500	337950	108397	944
E2	5	1210	699	509	269	484000	479200	430400	468200			DNA CP C88
E3	5	630	331	345	157	330000	270400	252200	281000			CPN10877
E4	5	1041	647	450	209	418400	438800	334400	407100			
E5	9	2448	1323	1590	915	976200	1165200	1484000	1193400	633925	517291	124
E6	9	2756	1435	1378	661	1103200	1125800	1057600	1103000			0.0048
E7	9	140	89	66	35	58000	54000	56000	552000			
E8	9	513	237	234	97	205200	188400	156200	184300			

Screen #	S9
Date	

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Genset SEQ ID NO 500
Genset SEQ ID NO 478
Genset SEQ ID NO 468

Mouse ID	Day post challenge	Plate A		Plate B		Plate C		Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Group SD IFU/lung	Wilcoxon p valueive grp B, same day)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100					
B1	5	2054	1238	1188	619	821600	862400	896400	834200	665240	255000, 862	saline
B2	5	1604	644	760	394	641600	641600	630400	638600			
B3	5	452	301	327	140	160600	261200	224000	228600			
B4	5	2082	1182	1083	619	632600	968000	693400	608600			
B5	5	1970	999	872	366	786000	748400	585600	711600			
B6	9	1198	577	593	368	478400	456000	585600	694000	236080	134450, 158	saline
B7	9	491	203	248	104	198400	178600	166400	186500			
B8	9	704	234	311	105	261600	216600	262000	245400			
B9	9	467	212	241	93	186800	181200	148800	174500			
B10	9	292	134	98	51	118600	92900	61900	98000			
E1	5	1089	605	605	309	427600	484000	494000	472500	566675	322172, 808	0.3556 DNA pCAI628
E2	5	1126	577	633	338	450400	484000	540800	486800			
E3	5	2384	1210	1337	872	945600	1018800	1395200	1094600			
E4	5	534	325	231	133	213600	222400	212600	217800			
E5	9	DEAD	DEAD	DEAD	DEAD	DEAD	DEAD	DEAD	DEAD	148733, 333	8003, 51749	0.25 DNA pCAI628
E6	9	382	197	152	67	156800	138600	138200	143800			
E7	9	381	206	181	93	152400	158600	148800	155100			
E8	9	439	197	148	71	175600	136000	136000	141300			
F1	5	2800	1590	1548	822	1120000	1255200	1283200	1229400	468300	445115, 571	0.1127 DNA pCAI634
F2	5	637	220	270	128	214800	186000	208400	203300			
F3	5	245	107	115	60	98000	68800	98000	92900			
F4	5	650	454	418	273	260000	348600	348600				
F5	9	457	194	155	96	182800	135600	153600	151900	354650	241592, 658	1.27 DNA pCAI634
F6	9	187	76	117	39	68600	77200	82400	70900			
F7	9	1168	605	830	408	467200	574000	652600	507000			
F8	9	1252	732	830	478	500900	624800	764800	628600			
G1	5	383	191	182	83	157200	141200	132800	143100	188775	35538, 468	0.03175 DNA pCAI640
G2	5	592	289	217	111	236800	202400	177600	204800			
G3	5	572	298	177	117	228800	185200	167200	186600			
G4	5	672	333	250	177	268800	233200	285200	254600			
G5	9	1097	507	441	186	438400	376200	267600	373100	50568, 388	0.3046 DNA pCAI640	
G6	9	748	422	398	131	298400	328000	205600	291000			
G7	9	1097	507	523	222	438600	412000	355200	404500			
G8	9	1238	591	532	187	405200	448200	298200	423200			

Screen #	\$10
Date	

Screen #	\$10	Notebook #	1837	Genset SEQ ID NO 305
Date		Page #	56	Genset SEQ ID NO 876
				Genset SEQ ID NO 485
				Genset SEQ ID NO 480

Note: samples tested at 1:100, 1:200, 1:200 and 1:400 in this screen

Note: samples tested at 1:100, 1:200, 1:200 and 1:400 in this screen

"This committee tested all 1,100 11,100 11,200 these didn't

This sample was tested at 1:30, 1:100, 1:1000 and 1:2000. These dilutions were taken into the calculation for Ave age IR-01 by

Mouse ID	Day post challenge	Plate A		Plate B		Wilcoxon p value (vs GFP B, same day)			
		Inclusions per well @ 1:100	Inclusions per well @ 1:200	Inclusions per well @ 1:100	Inclusions per well @ 1:200	Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Group SD IFU/lung	Group mean IFU/lung
B1	5	361	216	176	144	304800	313600	460800	348200
B2	5	238	105	122	80	196400	181600	256000	202400
B3	5	480	278	242	148	384000	418000	473600	422400
B4	5	384	180	201	60	291200	301800	256000	289200
B5	5	1112	563	574	292	689600	698600	838400	886800
B6	9	81	36	57	19	84800	74400	89800	157000
B7	9	367	175	205	74	283600	304000	236800	284600
B8	9	138	70	110	41	101800	144000	131200	132000
B9	9	100	30	66	25	80000	76800	80000	78400
B10	9	257	119	169	69	205600	230400	228600	221600
D1	5	168	84	94	29	134000	142400	92800	128000
D2	5	342	177	168	70	273600	279000	222000	282400
D3	5	157	58	73	29	125600	104600	92800	107000
D4	5	62	40	37	13	49600	61600	41600	53800
D5	9	331	178	143	63	284800	255200	201600	244200
D6	9	88	51	58	17	78600	65600	54400	75800
D7	9	165	71	82	42	132000	122400	134400	127800
D8	9	123	62	57	18	98400	65200	57600	88800
E1	5	298	139	82	51	238400	176800	163200	188600
E2	5	92	46	49	18	73600	77600	57600	71600
E3	5	288	104	138	41	212800	193600	131200	162800
E4	5	42	21	21	5	33800	33600	18000	29200
E5	9	4	2	4	2	32000	40000	6400	4900
E6	9	71	25	37	18	58800	49600	51200	51800
E7	9	128	72	100	37	102400	1317600	118400	124000
E8	9	80	28	64	24	64000	73600	76800	72000
F1	5	208	125	126	68	164800	200800	217600	198000
F2	5	481	247	278	125	384800	420000	400000	409200
F3	5	147	49	65	32	117600	91200	102400	100600
F4	5	109	43	49	26	67200	73600	63200	79400
F5	9	173	80	57	17	134600	83600	54400	65000
F6	9	104	111	157	76	242400	2160400	245200	2261600

Screen #	S16
Date	

Genset SEQ ID NO 737

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Important Note:

An error was made in Group B, where the mice were challenged with saline instead with C.p. In order to calculate Wilcoxon p values, use Group B values from Screen 14, as date of study and IFU values are similar. S14 values are in RED.

Mouse ID	Day post challenge	Plate A		Plate B		@ 1:100	Average IFU per lung @ 1:200	Average IFU per lung @ 1:100	Group mean IFU/lung	Wilcoxon p value (vs S14 grp B)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:100	Inclusions per well @ 1:200						
B1	9	0	0	0	0	0	0	0	0	0	saline
B2	9	0	0	0	0	0	0	0	0	Ave IFU/lung	no challenge
B3	9	0	0	0	0	0	0	0	0	values:	
B4	9	0	0	0	0	0	0	0	0	638500	
										331600	
										238650	
										15000	
										101800	
D1	9	18	10	6	2	7200	6400	3200	5600	12600	9878.66409
D2	9	106	38	34	14	42400	28000	22400	30200	0.2488	DNA pCaI MONP
D3	9	37	11	10	5	14800	8400	8000	9800		
D4	9	83	32	18	2	33200	19200	3200	18700		
D5	9	0	0	0	0	0	0	0	0		
D6	9	42	13	15	3	16800	11200	4800	11000		
F1	9	14	8	10	4	5000	7200	8400	6000	3650	2157.73901
F2	9	15	7	6	3	6000	5200	4800	5300	+ 784D	
F3	9	0	0	0	0	0	0	0	0		
F4	9	13	7	3	0	5200	4000	0	3300		
F5	9	18	7	4	3	7200	4400	4800	5200		
F6	9	13	2	3	1	5200	2000	1800	2700		
G1	9	18	11	3	1	8400	5600	1800	4800	7886.66867	5195.08315
G2	9	42	24	18	5	18800	18000	8000	14200		DNA pCaI MONP
G3	9	18	11	6	1	6400	7600	1800	5000		+ MONP ISCOMS
G4	9	57	28	11	4	22800	15800	6400	15100		
G5	9	37	6	5	3	14800	5200	4800	7500		
G6	9	2	1	0	0	800	400	0	400		
H1	9	379	188	111	75	151600	111600	120000	123700	82286.68687	31908.7217
H2	9	148	98	77	34	59200	54400	63000	54400	0.0891	DNA pCaI MONP
H3	9	56	22	20	14	22400	16800	22400	19800		challenge with CWL 028
H4	9	124	79	69	31	48600	59200	48600	54400		
H5	9	132	58	57	16	52800	48000	25600	42800		
H6	9	215	109	93	21	86000	80800	33800	70300		
I1	9	86	49	39	30	38400	35200	48000	39200	58568.68687	20404.7925
I2	9	86	46	37	24	34400	33200	38400	34800	PBS	challenge with PBS

Genset SEQ ID NO 304

Genset SEQ ID NO 466

Screen #	S17
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Screen #	S18
Date	

Mouse ID	Day post challenge	Plate A		Plate B		Wilcoxon p value (vs GFP B)	Immunized with				
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100					
B1	9	3	1	2	1200	3200	1700	32293.935	na	saline	
B2	9	88	44	43	23	38400	38800	38200	106100		
B3	9	275	124	157	56	110000	112400	98900	106100		
B4	9	91	42	36	22	38400	31200	35200	313500		
B5	9	198	77	88	44	78200	68000	70400	70400		
B6	9	115	60	60	33	48000	48000	52800	48700		
B7	9	0	1	0	1	0	400	1600	600		
B8	9	54	23	17	16	21600	163000	25300	19800		
D1	9	12	6	3	2	49000	36000	3200	30860.6887	34538.9474	DNA-pCAI14
D2	9	13	2	5	2	52000	2800	3200	3500		
D3	9	273	121	136	61	106200	102900	97800	103100		
D4	9	101	53	43	25	40400	39800	40000	38900		
D5	9	43	19	12	8	17200	12400	12800	13700		
D6	9	74	27	21	12	28800	18200	18200	21800		
I1	9	42	13	26	13	18400	18400	20300	17760	60018.6887	37360.2868
I2	9	304	123	151	63	121600	109800	100800	110400		
I3	9	291	122	141	70	115400	105200	112000	105700		
I4	9	86	31	37	15	28400	27200	24000	26200		
I5	9	119	55	60	44	47600	54000	70400	55500		
I6	9	135	40	45	23	54000	34000	38800	38700		

Genset SEQ ID NO 577

Genset SEQ ID NO 580

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Screen #	S17
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Screen #	S18
Date	

Mouse ID	Day post challenge	Plate A		Plate B		Wilcoxon p value (vs GFP B)	Immunized with				
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100					
B1	9	65	29	44	21	26200	33800	28500	59237.5	27841.3198	na
B2	9	214	119	142	66	85500	104400	105500	100000		
B3	9	20	14	20	14	10400	13800	22400	15000		
B4	9	108	54	93	41	43200	58800	55500	56500		
B5	9	151	81	83	31	80400	95800	49800	80300		
B6	9	216	114	NA	NA	86400	91200	NA	88800		
B7	9	80	35	41	23	24000	30400	38800	30400		
B8	9	185	73	87	47	74000	84000	75200	69300		
D1	9	81	37	36	20	32400	28200	32000	16700	6514.88862	DNA-pCAI327

D2	9	48	17	14	5	19200	12400	8000	13000
D3	9	31	13	10	9	12400	9200	14400	11300
D4	9	9	5	6	2	3600	4400	3200	3900
D5	9	55	18	34	10	22000	20800	16000	19800
D6	9	42	26	34	12	16800	24800	19200	21400
E1	9	125	76	76	31	50000	66800	48600	55300
E2	9	35	21	19	6	14000	18000	12800	14700
E3	9	82	32	46	20	32800	31200	32000	31800
E4	9	264	115	121	59	108600	94400	89600	98000
E5	9	50	28	45	14	20000	26400	22400	24800
E6	9	86	26	33	7	26400	24400	11200	21600

, DNA pCAT 711

0.2824

27821.0851

Screen #	S20
Date	128

pCA16OMP Genset SEQ ID NO 737

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung @ 1:100	Group mean IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	73	29	42	17	29200	28500	134387.5	142221.222
B2	9	1110	523	689	311	444000	486800	497600	478800
B3	9	515	234	275	120	208000	203800	192000	201300
B4	9	338	159	176	81	135200	134800	138600	133800
B5	9	53	27	37	14	21200	25000	22400	23700
B6	9	83	51	43	22	33200	37600	35200	35900
B7	9	238	130	152	72	94400	112800	115200	108900
B8	9	105	76	81	42	56000	623000	617200	64700
H1	9	208	76	110	47	82400	75200	77000	34416.8897
H2	9	60	45	45	13	24000	36000	208000	282000
H3	9	13	3	18	4	5200	7600	6400	8700
H4	9	182	77	88	28	64000	66000	44800	60400
H5	9	46	21	26	12	18400	18800	16200	18100
H6	9	40	11	18	7	16000	11600	11200	12600

pCA1624 Genset SEQ ID NO 503

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung @ 1:100	Group mean IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	172	75	96	44	68600	70400	68600	78875
B2	9	46	13	18	16	19200	12400	28900	18200
B3	9	163	77	71	34	65200	59200	54400	59500
B4	9	63	62	58	22	37200	47200	35200	41700
B5	9	208	103	116	55	82400	68900	68900	67000
B6	9	184	91	92	50	73000	73000	80000	75000
B7	9	301	148	158	69	120400	122400	110400	118900
B8	9	435	173	180	73	174000	143200	116800	144300
H1	9	180	101	86	37	72000	74800	59600	70200
H2	9	531	255	256	128	212400	204400	204800	208500
H3	9	201	97	123	32	69400	68600	51200	76900
H4	9	627	241	268	113	250800	37600	48600	41200
H5	9	569	237	274	110	227800	204400	178000	203100

pCA1673 Genset SEQ ID NO 1035

Screen #	S23
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Screen #	S23
Notebook #	1637
Date	135

Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:100	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Average IFU per lung	Group mean IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
B1	9	194	116	109	83	71800	90800	108800	90000	141767.5	122234.762	na
B2	9	156	86	104	40	62400	78000	64000	69800			PBS
B3	9	286	155	182	86	118200	134800	156800	136400			
B4	9	961	582	618	305	384400	488000	488000	458100			
B5	9	367	179	222	124	146800	186400	186400	168500			
B6	9	145	79	60	18	58000	55800	28800	48500			
B7	9	32	21	11	10	12800	12800	16000	13650			
B8	9	356	216	193	83	142400	163800	132800	150600			
11	9	83	42	60	19	33200	40800	30400	36300	50333.3333	18202.2587	DNA pCA1473
12	9	78	66	66	22	31200	52800	55200	43000			
13	9	159	65	80	33	63800	58000	52800	58100			
14	9	180	65	90	33	72000	62000	52800	62200			
15	9	75	28	32	10	30000	24000	16000	23500			
16	9	215	77	122	44	86000	78800	70400	78500			

Screen #		527		Notebook #		1837		pCA60kDa		Genset SEQ ID NO 596		pCAIMOMP		Genset SEQ ID NO 737	
Date		Page #		181											
Mouse ID	Day post challenge	Plate A		Plate B		Plate A		Plate B		Plate A		Plate B		Wilcoxon p value (vs GFP B)	
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100	Average IFU per lung @ 1:200	Average IFU per lung @ 1:100	Inclusions per well @ 1:200	Inclusions per well @ 1:100	Average IFU per lung @ 1:200	Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Average IFU per lung @ 1:100	Group SD [IFU/lung]	Group mean [IFU/lung]
B1	9	210	140	133	72	84000	105200	115200	104400	74925.5	44432.7253	na	na	PBS	
B2	9	71	30	58	23	28400	35200	36600	33800					PBS	
B3	9	195	138	116	70	78000	100800	112000	97900					PBS	
B4	9	77	50	54	30	40800	41600	41600	40500					PBS	
B5	9	378	225	202	102	151200	170800	163200	164000					PBS	
B6	9	154	89	82	34	61600	71200	54400	63200					PBS	
B7	9	201	106	76	44	80400	72800	70400	74100					PBS	
B8	9	43	28	19	7	17200	18000	11200	18100					PBS	
H1	9	12	6	3	4	48000	44000	6400	5000	8883.33333	5473.69974	0.001332	DNA 6CA CRNP 60K	DNA 6CA CRNP 60K	
H2	9	45	23	24	12	18000	18800	19200	19700					DNA 6CA CRNP 60K	
H3	9	20	10	7	4	8000	6800	6400	7000					DNA 6CA CRNP 60K	
H4	9	32	23	6	7	12800	11600	11200	11800					DNA 6CA CRNP 60K	
H5	9	28	12	11	5	11200	8200	8000	9400					DNA 6CA CRNP 60K	
H6	9	4	2	1	1	1800	1200	1000	1400					DNA 6CA CRNP 60K	
H7	9	55	28	17	12	22000	17200	18200	18900	25650	10914.2554	0.0283	DNA 6CA CRNP 60K	DNA 6CA CRNP 60K	
H8	9	88	37	40	16	34400	30800	28800	31200					DNA 6CA CRNP 60K	
H9	9	49	27	22	10	19600	19800	18000	18700					DNA 6CA CRNP 60K	
H10	9	39	13	15	5	15200	11200	8000	11400					DNA 6CA CRNP 60K	
H11	9	145	47	50	28	58000	38800	44800	45100					DNA 6CA CRNP 60K	
H12	9	70	42	32	17	28000	26800	27200	26800					DNA 6CA CRNP 60K	

pCAIMOMP Genset SEQ ID NO 737

Screen #	S31
Date	

Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per lung @ 1:200	Average IFU per lung @ 1:100	Group mean IFU/lung	Wilcoxon P value (vs grp B)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:200	Inclusions per well @ 1:50					
B1	9	135	60	67	36	54000	50500	53100	47525	28892.8382
B2	9	147	80	51	29	58000	52400	48400	52500	PBS
B3	9	142	75	71	33	56900	58400	52900	56900	
B4	9	304	136	141	69	121600	110800	104000	113400	
B5	9	79	49	26	19	31900	31200	30300	31100	
B6	9	61	37	28	11	24400	28600	17800	23500	
B7	9	45	11	15	6	18000	10400	8600	12100	
B8	9	89	59	42	19	38800	40400	30300	37700	
D1	9	23	13	12	8	92000	100000	105000	20550	8151.43137
D2	9	37	18	24	14	14400	16000	22400	17200	DNA-pCAI MONP IN + IM
D3	9	65	31	49	28	28000	32000	41800	32900	
D4	9	41	15	15	9	16400	12000	14400	13700	
D5	9	39	17	27	16	15000	17800	25500	19100	
D6	9	64	24	43	25	25000	261000	402000	28900	
E1	9	11	3	3	1	4400	2400	1600	2700	2266.68897 4555.72855
E2	9	33	16	20	7	13200	14400	111200	13300	DNA-pCAI MONP IN only
E3	9	17	8	14	4	6800	8800	6400	7700	
E4	9	25	18	19	6	10000	14000	9600	111800	
E5	9	20	9	15	2	8000	9800	3200	7800	
E6	9	2	1	0	0	600	400	0	400	
F1	9	34	18	17	7	13600	13200	111200	12800	38082.3333 27897.934
F2	9	149	54	66	20	59600	48200	32000	47500	DNA-pCAI MONP IN only
F3	9	108	35	47	12	43200	32900	19200	32000	
F4	9	2	1	0	1	800	400	1800	800	
F5	9	122	54	80	33	48800	45000	52800	48200	
F6	9	284	101	113	45	105600	85000	72200	67200	
G1	9	47	11	31	12	18400	16800	19200	17900	54282.3333 45976.0896
G2	9	57	14	14	7	22900	11200	11200	14100	+ 78 kB
G3	9	56	24	26	12	22900	20000	19200	20400	DNA-pCAI MONP IN + IM
G4	9	278	100	132	67	110400	120200	103800	114400	+ 78 kB
G5	9	118	50	80	14	47200	44000	22100	39400	IN only
G6	9	415	158	194	54	186000	140000	86400	133100	
H1	9	112	58	43	28	44900	40400	44400	42000	DNA-pCAI MONP
H2	9	80	48	39	22	32000	34000	35200	33900	+ 78 kB
H3	9	50	22	26	9	20000	19200	18200	16200	
H4	9	42	14	17	12	18900	12400	19200	15200	
H5	9	25	7	13	4	10000	8000	6400	8100	

Hb	9	111	41	49	22	44400	39000	35200	37900				
11	9	54	30	28	18	21600	23200	28900	24200	70168.6687	33333.0997	1.427	DNA pCAT MONP
12	9	112	58	44	24	44900	42800	39400	41200				+ 78 AD
13	9	277	122	137	51	110800	103600	81800	99800				IN only
14	9	328	152	158	71	136400	126000	119500	120000				
15	9	170	87	94	39	68900	72400	82400	68800				
16	9	207	71	91	27	62900	64800	43200	63900				

Screen # S32 **Notebook #** 1841 **Genset SEQ ID NO** 315

Screen #	S32
Date	16

Mouse ID	Day post challenge	Plate A		Plate B		Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:200	Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Group mean IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100								
B1	9	141	91	72	50	56400	65200	80000	89700	61587.5	28684.8124	na	PBS
B2	9	148	68	43	59200	68600	68600	68600	68600	68600	68600	68600	
B3	9	134	65	55	38	53800	52000	52000	57600	53800	53800	53800	
B4	9	61	55	49	22	38400	41600	35200	38700	38700	38700	38700	
B5	9	324	172	151	75	129600	129600	120000	127000	127000	127000	127000	
B6	9	54	31	40	21	21600	24800	38600	28000	28000	28000	28000	
B7	9	80	47	61	14	32000	43200	22400	35200	35200	35200	35200	
B8	9	173	103	98	53	68200	80800	84800	78800	78800	78800	78800	
H1	9	63	64	35	27	37200	35600	43200	37000	28916.8867	18054.7724	0.04282	DNA pCABk319
H2	9	35	17	13	7	14000	12000	11200	12300	12300	12300	12300	
H3	9	102	45	52	27	49600	38600	42200	42400	42400	42400	42400	
H4	9	0	0	0	0	0	0	0	0	0	0	0	
H5	9	115	53	54	26	48400	44800	41600	44400	44400	44400	44400	
H6	9	68	30	40	14	27500	28000	22400	26500	26500	26500	26500	

Screen # S34 **Notebook #** 1841 **Genset SEQ ID NO** 201

Screen #	S34
Date	30

Mouse ID	Day post challenge	Plate A		Plate B		Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Group mean IFU/lung	Wilcoxon p values (vs grp B)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100								
B1	9	432	231	228	128	172800	184000	204800	186400	141587.5	84314.2253	na	PBS
B2	9	422	210	222	109	168800	172800	174400	172200	172200	172200	172200	
B3	9	129	85	76	42	51600	56400	67200	57900	57900	57900	57900	
B4	9	673	348	424	233	270400	308600	372800	315200	315200	315200	315200	
B5	9	312	149	159	76	124800	123200	121600	123200	123200	123200	123200	
B6	9	130	67	64	36	53600	52000	53600	57600	57600	57600	57600	
B7	9	407	219	207	113	162800	170400	180800	171100	171100	171100	171100	
B8	9	125	76	63	32	50000	55600	51200	53100	53100	53100	53100	
D2	9	129	63	77	36	51600	56000	57600	55300	76160	78030.7734	0.2844	DNA pCABk319
D3	9	550	213	292	172	220000	202000	275200	224800	224800	224800	224800	
D4	9	80	31	37	16	24000	27200	25600	28000	28000	28000	28000	
D5	9	182	93	89	41	72800	74600	65600	72000	72000	72000	72000	
D6	9	0	0	0	0	0	0	0	0	0	0	0	omitted from calculations
D7	9	0	0	0	0	0	0	0	0	0	0	0	

Screen # S34 **Notebook #** 1841 **Genset SEQ ID NO** 477

Screen #	S34
Date	30

Screen #	S34
Date	30

Screen # S34 **Notebook #** 1841 **Genset SEQ ID NO** 335

Screen #	S34
Date	30

Date _____

Page # **62**

Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per lung @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs grp B)	Immunized with
		Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50								
B1	9	365	189	206	108	146000	156000	172800	241600	215200	238600	0.745375	PBS
B2	9	640	345	259	137	250000	241600	145600	178600	174400	169800	na	PBS
B3	9	384	220	229	109	146000	178600	174400	169800	174400	169800	na	PBS
B4	9	427	175	193	118	170800	147200	188800	161500	161500	161500	na	PBS
B5	9	271	151	113	77	108400	105600	110700	112200	110700	110700	na	PBS
B6	9	288	142	109	71	115200	113800	113800	113800	107400	107400	na	PBS
B7	9	797	391	377	168	316800	307200	298800	300500	298800	298800	na	PBS
B8	9	177	60	86	47	70800	58200	75200	68100	68100	68100	na	PBS
11	9	275	137	157	92	110000	117600	141200	123100	123100	123100	0.01988	DNA pCa1635
12	9	128	51	86	38	51200	54800	60800	55400	55400	55400	na	
13	9	126	60	68	31	50400	54400	49600	52200	52200	52200	na	
14	9	304	134	189	98	121600	128200	156800	134200	134200	134200	na	
15	9	72	57	13	28600	34400	20800	29500	29500	29500	na		
16	9	53	25	21	9	21200	18400	14400	18100	18100	18100	na	

Genset SEQ ID NO 472

Screen #	S41
Notebook #	1941
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pCAI638

Mouse ID	Day post challenge	Plate A		Plate B		Plate mean IFU @ 1:200	Group mean IFU/lung	Wilcoxon P value (vs grp B)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:100	Average IFU per lung @ 1:50				
B1	9	577	206	304	137	230800	249800	216200	232900
B2	9	418	163	250	94	167600	177200	150400	168100
B3	9	231	123	157	66	92400	112000	105800	105500
B4	9	383	218	238	109	153200	182400	174400	173100
B5	9	178	121	118	61	71200	95800	90000	90000
B6	9	615	300	308	147	246000	240000	225200	242100
B7	9	473	219	237	113	188200	183700	180800	183700
B8	9	289	190	174	83	115600	145600	132800	134900
D1	9	65	53	48	26	34000	39800	41600	39700
D2	9	210	74	108	47	84000	73200	75200	76400
D3	9	438	207	221	114	174400	171200	182400	174800
D4	9	124	63	80	43	49800	57200	68800	58200
D5	9	262	152	142	62	118600	117600	98200	112800
D6	9	133	57	65	35	54400	48900	59000	52000

Genset SEQ ID NO 596

Screen #	S43
Notebook #	1941
Page #	97

pCA60kDa

Mouse ID	Day post challenge	Plate A		Plate B		Plate mean IFU @ 1:200	Group mean IFU/lung	Wilcoxon P value (vs grp B)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:100	Average IFU per lung @ 1:50				
B1	9	500	270	259	135	200000	211600	216000	203800
B2	9	150	92	86	47	82400	71200	75200	70000
B3	9	471	253	161	108	188400	214400	209600	228700
B4	9	445	227	229	108	178000	182400	172800	178900
B5	9	1045	527	561	255	419000	435200	409000	424100
B6	9	554	283	333	159	221600	228400	225400	242200
B7	9	588	287	363	173	227200	280000	279800	258000
B8	9	134	60	73	40	53800	53200	64000	50000
J1	9	59	30	47	10	23600	30800	16000	25300
J2	9	104	63	55	31	41600	47200	48600	48400
J3	9	284	131	165	80	113600	115400	125000	118600
J4	9	17	8	15	6	6000	9200	8700	8700
J5	9	46	25	18	7	18400	11200	15800	10300
J6	9	29	12	15	5	11600	10800	8000	10300

DNA pCA CRNP 50 kD

Screen #	S44
Date	

Notebook #	1941
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	pCACPNM882	Genset SEQ ID NO 880
	pCA60kDa	Genset SEQ ID NO 596

Highlighted section is excluded from the calculation. Group B values from Screen 3 will be used for Wilcoxon p value calculation. S43 values are in RED.

Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per lung @ 1:200	Average IFU per lung @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs S43 grp B)	Immunized with
		Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50								
B1	9	30	77	99	65	50000	70400	104000	74200	142850	38040	0.0033	S43-Grp B
B2	9	59	23	33	25	23800	23200	52800	30700	29850	20860		PBS
B3	9	65	44	48	25	36000	35800	40000	31900		70000		
B4	9	39	20	26	14	15000	20800	22400	19500		225700		
B5	9	428	225	223	103	171200	178200	164800	178200		178600		
B6	9	468	220	267	102	187200	178000	161200	185000		424100		
B7	9	282	153	149	82	112800	120800	131200	121400		242250		
B8	9	240	111	122	53	98000	93200	84800	91800		256000		
											56000		
11	9	47	15	24	14	18800	15600	22400	18100	7750	39880	0.3616	DNA pCACPNM 882
12	9	313	180	187	84	125200	130800	134400	130300				
13	9	185	61	93	49	74000	68600	78400	72900				
14	9	125	69	68	35	50000	54000	56000	53500				
15	9	180	45	100	41	72000	58000	63400	63400				
16	9	374	143	182	71	149800	122300	113800	128300				
J1	9	105	71	82	29	42000	61200	48400	52700	56516	0.007942	0.007942	DNA pCACPNM 882
J2	9	68	48	59	28	27200	42000	44800	38000				
J3	9	213	139	164	64	65200	121200	102400	107500				
J4	9	34	24	29	19	13800	21200	30400	21800				
J5	9	140	72	91	39	58400	65200	62400	62800				
J6	9	153	65	100	48	61200	66000	78800	617500				

Screen #	S47	pCA1396		Genset SEQ ID NO 28		Wilcoxon p values (vs grp B)	Immunized with
		Notebook #	1841	Notebook #	128		

Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per lung @ 1:200	Average IFU per lung @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Group mean IFU/lung	Group SD IFU/lung	Wilcoxon p value (vs S43 grp B)	Immunized with
		Inclusions per well @ 1:100	Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:50								
B1	9	385	183	191	91	146000	148600	145600	147700	325850	284241	414	PBS
B2	9	472	225	238	121	189800	182200	183800	182200				
B3	9	578	306	158	232	249400	248600	249400	249400				
B4	9	1009	448	481	232	402800	375600	371200	381500				
B5	9	758	388	389	201	302400	302800	321600	307400				
B6	9	1716	1384	1471	825	688400	1142000	1320000	1072800				
B7	9	374	200	191	93	149600	158400	148800	152800				
B8	9	276	150	143	77	119400	117200	122200	117000				

Screen # 549 Notebook # 1941 pCA60kDa Genset SEQ ID NO 596

Date	142
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Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per lung @ 1:100	Average IFU per lung @ 1:200	Average IFU per lung @ 1:200	Group mean IFU/lung	Wilcoxon p value (vs matched group)
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:100	Inclusions per well @ 1:200					
C57BL/6										
D1	9	385	181	187	64	148000	132000	102400	131700	108520 0.6622216
D2	9	514	257	279	131	205600	214400	208600	211000	na PBS
D3	9	258	116	133	56	103200	98600	88600	98000	
D4	9	136	61	74	29	54400	54000	41600	51000	
D5	9	109	46	67	17	43800	44400	27200	40800	
Balb/c										
E1	9	283	135	127	58	113200	104800	92800	103800	168740 75974.0377
E2	9	903	413	403	190	381200	326400	304600	326500	
E3	9	511	236	241	115	204000	198800	184000	192500	
E4	9	397	269	203	105	158800	148800	148000	161000	
E5	9	389	205	183	88	155600	158200	148800	152700	
Balb/c										
F1	9	74	31	39	21	28800	28000	33800	28800	76380 32203.3198
F2	9	198	111	102	53	76200	65200	64800	63800	
F3	9	223	120	106	64	86200	91800	912400	93700	
F4	9	149	84	77	40	58600	64400	64000	63100	
F5	9	329	156	183	75	131600	127800	120000	128700	
C57BL/6										
J1	9	33	11	18	14	13200	10800	22400	14300	56540 47740.7834
J2	9	336	166	186	101	134400	142000	161600	145500	
J3	9	146	66	79	38	58400	68800	66200		
J4	9	48	12	23	6	19200	14000	12800	15000	
J5	9	150	62	57	26	60000	47800	41800	48200	
Balb/c										
L1	9	23	9	22	8	6200	12400	12800	11700	34980 36831.7037
K2	9	1028	498	513	246	411200	404400	398600	403400	225375 0.3085
K3	9	253	120	137	63	101200	102800	108800	101600	DNA pCA CRMP 60kD 0.9048
K4	9	821	387	401	184	329400	315200	284400	313300	
K5	9	169	112	98	55	75800	86000	82900		
K6	9	0	0	0	0	0	0	0	0	omitted from calculations
Balb/c										
L1	9	23	9	22	8	6200	12400	12800	11700	34980 36831.7037
L2	9	54	24	17	6	21600	18400	8600	16200	
L3	9	83	39	49	22	33200	35200	34700		
L4	9	23	5	11	2	9200	6400	3200	6300	
L5	9	261	125	149	63	104000	108600	108100		

pCA60kDa Genset SEQ ID NO 596
pCA1OMP + pCA60kDa + pCA1764 + pCA1555a

Screen #	S50
Notebook #	1941
Date	152

Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per lung @ 1:200	Average IFU per lung @ 1:200	Group mean IFU/lung	Wilcoxon P values (vs grp B)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100				
B1	9	729	370	363	188	261600	262300	261800	21793.75	103234.453
B2	9	878	451	439	227	350400	356000	356200	256400	
B3	9	523	243	312	151	209200	222300	2241600	223700	
B4	9	289	150	159	71	119800	123800	113800	120100	
B5	9	885	459	478	227	354000	375200	386900		
B6	9	271	148	189	88	109400	134800	1317600	1218600	
B7	9	354	186	223	105	141800	167200	168900	161000	
B8	9	184	120	117	57	73600	94800	91290	88690	
F1	9	442	218	260	108	179800	191200	172800	183000	152100
F2	9	138	60	78	24	54040	55600	38400	51000	DNA+pCA CRMP 80
F3	9	177	63	96	38	64800	65300	60800		
F4	9	614	279	340	187	245600	247200	2617200	251600	
F5	9	253	149	189	79	101200	127200	128400	125500	
F6	9	598	315	320	138	239400	254000	217800	241000	
F7	9	121	77	59	26	54400	41600	49700		
F8	9	162	80	64	37	84800	57800	59200	59800	
F9	9	61	39	66	25	32400	42300	40300	38100	35366.6987
F10	9	64	28	24	11	25600	20000	17800	20800	15656.2731
F11	9	47	17	23	9	18800	18000	14400	16300	MOMP
F12	9	67	38	29	16	28500	26800	26800	26550	CRMP 90
F13	9	121	77	59	26	54400	41600	49700		pCAI 734
F14	9	162	80	64	37	84800	57800	59200	59800	pCAI 555

pCA1555a Genset SEQ ID NO 776775

Screen #	S51
Notebook #	1941
Date	159

exclude B1 from calculations

Mouse ID	Day post challenge	Plate A		Plate B		Average IFU per lung @ 1:200	Average IFU per lung @ 1:200	Group mean IFU/lung	Wilcoxon P values (vs grp B)	Immunized with
		Inclusions per well @ 1:50	Inclusions per well @ 1:100	Inclusions per well @ 1:200	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100				
B1	9	0	0	0	0	0	0	0	86800	86457.7165
B2	9	54	28	5	21600	20800	8000	17800		
B3	9	169	119	83	51	75600	80800	81600	79700	
B4	9	13	7	2	5200	5200	3200	4700		
B5	9	524	274	223	120	209600	198800	182300	198800	
B6	9	362	141	181	103	144800	129800	164800	141800	
B7	9	385	190	161	71	150000	138400	113800	135100	
B8	9	123	49	62	17	48200	44400	27200	41300	

								DNA	cGAI	555a
F1	9	52	17	22	9	20800	15800	14400	16800	11716.6667
F2	9	13	1	6	0	5200	2800	0	2700	13132.0748
F3	9	3	0	2	0	1200	800	0	700	
F4	9	43	17	15	5	17200	12800	8000	12700	
E5	9	0	0	0	0	0	0	0	0	
F6	9	118	47	48	17	47200	38000	27200	37800	

Screen #		Notebook #		1841		pCAI14		Genset SEQ ID NO 291		pCACPNM882		Genset SEQ ID NO 880	
Screen #	Date	Page #	Page #	169									
Mouse ID	Day post challenge	Plate A Inclusions per well @ 1:50	Plate B Inclusions per well @ 1:100	Plate A Inclusions per well @ 1:100	Plate B Inclusions per well @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Average IFU per lung @ 1:50	Average IFU per lung @ 1:100	Group SD	Median & p value (vs grp B)
B1	9	140	75	100	41	56000	70000	65800	65400	124175	105290 946	na	PBS
B2	9	602	299	328	154	245800	250000	246400	245800	64200			
B3	9	158	83	97	31	63200	72000	49800	64200				
B4	9	664	418	463	228	345600	352400	361600	355000				
B5	9	146	68	86	30	58400	61600	49800	57400				
B6	9	318	170	188	75	121700	135200	120000	129400				
B7	9	18	11	8	5	7200	8000	6000	7600				
B8	9	168	87	110	34	68400	78800	54400	69800				
E1	9	1320	610	775	338	528000	554000	540800	544200	204500	214450 816	1.338	DNA pCAI 314
E2	9	985	521	730	254	386000	500940	470400	454350				
E3	9	9	18	3	0	2	7200	12000	3000	3000			
E4	9	171	54	74	19	68400	51200	39400	50300				
E5	9	206	91	124	43	82400	861000	688000	80800				
E6	9	218	73	168	37	86400	95600	59200	84200				
G1	9	501	177	256	112	200400	175200	176200	181500	385800	256078 907	0.7546	DNA pCACPNM 882
G2	9	1162	487	628	241	464800	448200	385600	437200				
G3	9	604	279	331	123	241600	244000	198800	231800				
G4	9	685	286	388	186	280000	276900	261800	275100				
G5	9	2315	1078	1397	525	928000	973000	840000	930500				
G6	9	675	308	357	148	270000	286000	238800	258700				

DNA pCAI 419														
E1	9	1577	785	811	416	630800	638400	685800	643300	346533	333	181088	377	0.8432
E2	9	387	143	167	90	156800	130000	144000	142700					
E3	9	1477	506	668	253	590800	481600	404800	488700					
E4	9	1085	494	•	•	425200	396200	419600	419600					
E5	9	408	180	248	104	163200	171200	186400	186900					
E6	9	6277	259	380	131	256800	255800	209800	242900					
F1	9	94	48	47	18	37600	38000	28800	35600	118466	867	680798	8446	0.004862
F2	9	575	266	284	130	230000	2210000	209000	216500					
F3	9	181	74	82	37	72400	82400	58200	84100					
F4	9	158	85	63	39	63200	59200	62400	61000					
F5	9	456	127	224	107	182400	140400	171200	158600					
F6	9	418	144	265	121	1617200	163600	163600	172000					
H1	9	1450	860	720	340	580000	552000	546400	557000	245500		144052	19	0.1375
H2	9	931	229	237	114	252400	186400	182400	201900					
H3	9	394	149	181	71	157600	132000	113800	138800					
H4	9	372	188	178	69	148800	1317600	142400	141800					
H5	9	516	249	285	119	208400	205600	196400	202300					
H6	9	649	250	283	128	259800	217200	204800	224700					

Screen #	S54
Date	

- no count-contaminated well
- no count-well not stained

PCACPNM882 Genseq ID NO 880
PCA60kDa Genseq ID NO 596

Screen	56
Date	

Genset SEQ ID NO 468
Consort SEQ ID NO 205

PCAI635 Genset SEQ ID NO 477

Notebook #	R2163
Page #	1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/523,647

Applicant: MURDIN, Andrew D. et al.

Filed: March 10, 2000

TC/A.U.: 1645

Examiner: Mark Navarro

Docket No: 032931/0227

DECLARATION PURSUANT TO 37 CFR 1.131

I, Andrew Murdin, Director, External R&D Canada, Aventis Pasteur, hereby declare that:

1. I am an inventor in the above-identified application ('the application'), and am employed by the assignee, Aventis Pasteur.
2. Details of my employment history are as follows:

Since 2002 Director, External R&D Canada, Aventis Pasteur.

1999-2002 Principal Research Scientist, Aventis Pasteur.

1997-2002 Section Head, Aventis Pasteur.

1993-2003 Project Leader (Chlamydia), Aventis Pasteur.

1990-1993 Research Scientist, Connaught Laboratories Ltd. (subsequently Pasteur Merieux Connaught, subsequently Aventis Pasteur), Toronto, Canada.

1988-1990 Post-Doctoral Research Associate, Dept. of Microbiology, State University of New York, Stony Brook, NY, USA.

1985-1987 Post-Doctoral Research Fellow, Dept. of Microbiology, University of Surrey, Guildford, Surrey, England.

1981-1985 Scientific Officer, Vaccine Research Dept., Animal Virus Research Institute, Pirbright, Surrey, England.

Details of my education are as follows:

B.Sc., University of Bath, England, 1980

Ph.D., University of Surrey, England, 1986.

3. I obtained from Regis Sodoyer, an employee of the assignee Aventis Pasteur, at least 5 mg of the plasmid construct pCACRMP60 before November 4, 1998.

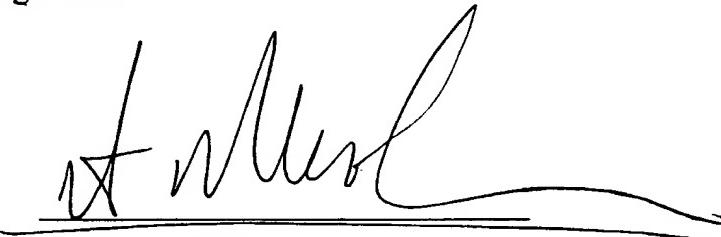
4. Attached are copies of e-mail correspondence between me and Regis Sodoyer. The dates deleted from the e-mail messages are before November 4, 1998. The product identified in the e-mails as CPCRMP60KD is the same as the plasmid construct pCACRMP60 shown in Figure 3 of the application.

5. The construct pCACRMP60 was used to immunize mice as described in Example 3 of the application. Injection of the mice with pCACRMP60 occurred before November 4, 1998.

6. I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

20th Feb 2004

Date



Andrew Murdin

Director, External R&D Canada, Aventis Pasteur

Subject:

Date

Murdin, Andrew - PMC-CA

From: Murdin, Andrew - PMC-CA
To: Sodoyer, Regis - PMC-FR
Cc: Dunn, Pamela - PMC-CA; Switzer, Iain - PMC-CA
Subject: RE: Shipment
Date:

Thankyou very much Regis, Your laboratory has been busy! Please send this material next week. If you have any more than 5mg please send that too, but we can work with 5mg if that is all you have. The person to contact about the shipments is Sharon James (fax + 1 416 667 2979). I would recommend that you do this personally rather than rely on your shipping department, since the last shipment was packaged with other material being sent to a different department here in Canada and all the documentation went to that department, not to me or Sharon.

Not all chlamydia proteins may express well in E.coli, and I have part of an FTE next year to look at alternative systems, so I will be interested to learn your results with 76kDa. We should discuss this when you return from vacation.

Just so that I am absolutely sure, could you confirm that the purified MOMP is the C.pneumoniae MOMP, not the C.trachomatis MOMP?

Thanks again and best wishes, Andrew.

From: Sodoyer, Regis - PMC-FR
To: Murdin, Andrew - PMC-CA
Cc: Aujame, Luc - PMC-FR
Subject: Shipment
Date:

Andrew,

Some news from Marcy

If you agree, we have the following list of products ready for shipment.

- CP003 (CPCRMP 9KD)
- CP004 (CPCRMP 60KD)
- CP007 (Incyte 202)
- CP009 (Incyte 605)
- CP012 (Incyte 394)
- CP013 (Incyte 395)
- CP014 (Incyte 396)

5mg each

(Purified MOMP protein (5 mg))

and probably the empty vector if we are on time with the purification.

7 aditional ORFs are cloned and sequenced at both ends and will be purified soon.

The expression of 76K in E. coli (pET28) gives very low yields and a lot of degradation, we are currently trying another expression system (home made vector with Arabinose promoter).

Date

Murdin, Andrew - PMC-CA

From: Sodoyer, Regis - PMC-FR
To: Murdin, Andrew - PMC-CA
Subject: Shipment
Date: Wednesday
Time: 10:08AM

Andrew,

We have arranged a shipment this morning, content is following:

- CP003 (CPCRM₉KD)
- CP004 (CPCRM₆KD)
- CP017 (Incyte 397) (in replacement of CP007)
- CP009 (Incyte 605)
- CP012 (Incyte 394)
- CP013 (Incyte 395)
- CP014 (Incyte 396)

5mg each
-Purified MOMP protein (25mg) ~5.5mg This is C.P. NOKP ~~WV~~
you will receive, as well as Sharon James, flight number and arrival time as soon as we know.
See attached e-mails

8

Witnessed _____
Date _____

Signed _____
Date _____